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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|----------------------|------------------|
| 10/816,084 | 04/01/2004 | Jesse Ambrosina | 56231-459 (MKS-90CN) | 9462 |

7590 05/09/2005

McDermott, Will & Emery
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EXAMINER

KRISHNAMURTHY, RAMESH

| | |
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| ART UNIT | PAPER NUMBER |
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3753

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---|---|--|
| Office Action Summary | Application No. 10/816,084 | Applicant(s) AMBROSINA ET AL. | |
| | Examiner Ramesh Krishnamurthy | Art Unit 3753 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 13, 16 - 25, 27, 28 and 31 - 34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 13, 16 - 25, 27, 28 and 31 - 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>04/01/04</u> . | 6) <input type="checkbox"/> Other: _____ |

This office action is responsive to communications filed 01/31/05.

Claims 1 – 13, 16 – 25, 27, 28 and 31 – 34 are pending.

1. The terminal disclaimer filed on 01/31/05 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 6,766,260 has been reviewed and is accepted. The terminal disclaimer has been recorded.

2. The information disclosure statement filed 04/01/04 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. Specifically, a copy of the document identified as Search report – GB 0300036.1 has not been provided.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 33 and 34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 33 and 34 recite limitation(s) that are not disclosed in the disclosure as originally filed. The disclosure as originally filed does

not support the limitation of regulating the current or voltage through a solenoid. In this office action the orifice setting is taken to be regulated electrically.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 – 6, 16 – 20, 25 and 31 – 34 **are** rejected under 35 U.S.C. 102(e) as being anticipated by McMillin et al. (US 6,333,272).

McMillin et al. discloses (see Fig. 3, for example), a system for dividing a single mass flow into two or more secondary flows of desired ratios, comprising: A) an inlet ((28)) adapted to receive the single mass flow wherein the inlet is free of any flow meters for providing a measurement of flow through the inlet; B) at least two secondary flow lines (12, 14) connected to the inlet, each flow line including, a flow meter (42, 34) measuring flow through the flow line and providing a signal indicative of the measured flow, and a valve (44, 36) controlling flow through the flow line based upon a signal indicative of desired flow rate; C) a user interface adapted to receive at least one desired ratio of flow (Col. 4, line 66 – Col. 5, line 2, for example); and D) a controller (40) connected to the flow meters, the valves, and the user interface, and programmed to, receive the desired ratio of flow through the user interface, receive the signals indicative of measured flow from the flow meters, calculate an actual ratio of flow

through the flow lines based upon the measured flow, wherein said calculation is made without reference to a measured flow through the inlet (Col. 6, lines 18 – 29), compare the actual ratio to the desired ratio, calculate the desired flow through at least one of the flow lines if the actual ratio is unequal to the desired ratio, and provide a signal indicative of the desired flow to at least one of the valves. Valves (36, 44) are electrically controlled valves and are taken here to include all known electrically actuated valve including a solenoid type valve. Flow meters (42, 34) are taken here to include all known types of flow meters including the well known thermal-based flow meters.

7. Claims 7 – 10, 12, 13, 21 – 24, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over McMillin et al. as applied to claims 1 – 6, 16 – 20, 25 and 31 – 34 above, and further in view of Lull et al. (US 6,752,166).

The patent to McMillin et al. discloses the claimed invention with the exception of explicitly disclosing (a) presence of three secondary flow lines or (b) a pressure sensor for measuring the pressure at either the inlet or at the secondary flow lines.

However, McMillin et al. discloses that it is known in the art to provide multiple supply lines (i.e. secondary flow lines) to the process chamber with the desired proportions depending upon the application (Col. 3, lines 52 – 54) and the desired etch uniformity requirements (Col. 3, lines 66 – 67).

Lull et al. ('166) discloses (Fig. 3, for example) that it is known in the art to provide three secondary flow lines (156 – 158) feeding fluid to a process chamber, for the purpose of achieving desired process uniformity within the chamber.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided in McMillin et al. three secondary flow lines for the purpose of achieving a desired process uniformity within the chamber, as recognized by Lull et al.

Lull et al. also discloses a pressure transducer (321) coupled to the common inlet (155) of the three secondary flow lines (156 – 158) for the purpose of measuring a pressure of the fluid at the inlet.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided in McMillin et al. a pressure transducer coupled to the common inlet of the three secondary flow lines for the purpose of measuring a pressure of the fluid at the inlet, as recognized by Lull et al.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Response to Arguments

9. Applicant's arguments with respect to claims rejected above have been considered but are moot in view of the new ground(s) of rejection.

It is however noted that the applicants have not responded to the previously stated rejection of claims 33 and 34 under 35 U.S.C. 1st paragraph for lack of written description. Additionally, it is noted that applicants have characterized the instant application to be a divisional of the application corresponding to the patent US 6,766,260 at line 3 in the first paragraph of the section entitled Double Patenting Rejection. However the instant application is a continuation of the application corresponding to the patent US 6,766,260, as reflected in the letter of transmittal of the instant application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramesh Krishnamurthy whose telephone number is (571) 272 – 4914. The examiner can normally be reached on Monday - Friday from 10:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene L. Mancene, can be reached on (571) 272 – 4930. The fax phone number for the organization where this application or proceeding is assigned is (703) 872 – 9306.

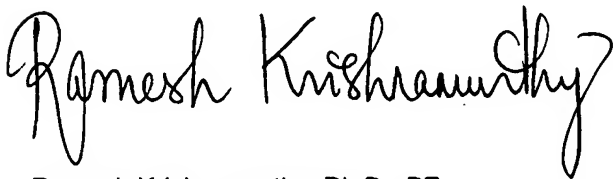
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 - 0861.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink that reads "Ramesh Krishnamurthy". The signature is fluid and cursive, with the first letter of each word being capitalized and prominent.

Ramesh Krishnamurthy, Ph.D., PE
Primary Examiner
Art Unit 3753